UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,392	02/15/2001	Donald R. Pederson	NCRC-0026-US(9417)	2999

			EXAMINER
26890	7590	04/05/2004	CHEN, CHONGSHAN

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ART UNIT	PAPER NUMBER
2172	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/784,392	PEDERSON ET AL.
	Examiner	Art Unit
	Chongshan Chen	2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _23 January 2004_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-43_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-43_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed on 23 January 2004 have been fully considered but they are

not persuasive.

2.   As per applicant's arguments regarding Tada teaches flushing of a transaction log to

volatile storage, but does not disclose the flushing of a transaction log from a volatile storage to

non-volatile storage have been considered but are not persuasive. Data stored in the volatile

storage will be lost when the system goes down, while the data in non-volatile storage will not be

lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to flush the log to non-volatile storage so that the data will not be lost when

the system goes down. Then the user can use the log data in the non-volatile storage to recover

the system. Furthermore, Bohannon (5,864,849) teaches flushing the transaction log to non-

volatile storage (Bohannon, Fig. 7, 760, flush tail to stable log).

3.   As per applicant's arguments regarding Tada does not teach a first access module writing

an end transaction indication to a first transaction log portion, where the first access module is

part of a cluster of access module, and also that the first access module sends an end transaction

directive to a fallback module associated with the first access module, where the fallback module

is also part of the cluster have been considered but are not persuasive. It is unclear to the

examiner what is a fallback module; therefore the examiner interprets a fallback module as any

processing module in a computer system. Tada teaches writing an end transaction indication to a

transaction log (Tada, Fig. 5, S12, set transaction end indication) and sending an end transaction

directive to a module (Tada, Fig. 5, S15, transaction end notification to application program).

4.   In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Bohannon discloses the transaction is processed by a plurality of access modules.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

was made to use the multi, parallel and distributed processing environments disclosed by

Bohannon in the system of Tada to divide a large processing task into smaller work and process

concurrently. Because the smaller work can be distributed to processes running on one or more

processing nodes, the processing required by the process can be completed much faster than if

the processing was performed on a single node by a single process.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-9 and 17-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tada et al. ("Tada", 5,544,359) in view of Bohannon et al. (5,864,849).

As per claim 1, Tada teaches a method of performing a transaction in a database system, comprising:

receiving a transaction to be performed (Tada, col. 1, lines 23-27); and

performing a flush of a transaction log in each access module before an end transaction procedure (The applicants disclose "flush" as transferring the transaction log from the volatile storage to stable storage, specification, page 2, lines 13-20. Tada discloses "The log data is then transferred to the log data buffer (132) on the main storage unit (101)", Tada, Fig. 5, col. 10, lines 33-34).

Tada does not explicitly disclose the log is flushed to a non-volatile storage. However, data stored in the volatile storage will be lost when the system goes down, while the data in non-volatile storage will not be lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to flush the log to non-volatile storage so that the data will not be lost when the system goes down. Then the user can use the log data in the non-volatile storage to recover the system.

Tada does not explicitly disclose the transaction is processed by a plurality of access modules. Bohannon discloses the transaction is processed by a plurality of access modules (Bohannon, col. 7, lines 37-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multi, parallel and distributed processing environments disclosed by Bohannon in the system of Tada to divide a large processing task into smaller work and process concurrently. Because the smaller work can be distributed to processes running on one or more processing nodes, the processing required by the process can

be completed much faster than if the processing was performed on a single node by a single

process.

As per claim 2, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 1, and further teach issuing a request to flush the transaction log with a message sent to

each access module for performing a last step of the transaction, the last step performed prior to

the end transaction procedure (Tada, Fig. 5, S14, Initialize transaction end indication).

As per claim 3, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 2, and further teach performing the flush of the transaction log in a data access step prior to

the end transaction procedure to avoid performance of a transaction log flush in the end

transaction procedure (Tada, Fig. 5, S13, Write DB, S14, Initialize transaction end indication).

As per claim 4, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 2, and further teach determining that the last step is being performed by all of the plurality

of access modules (Tada, Fig. 5, col. 10, lines 35-37).

As per claim 5, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 1, and further teach determining if the transaction log has been flushed before performing

the end transaction procedure (Tada, Fig. 5, col. 10, lines 39-47).

As per claim 6, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 5, and further teach avoiding performance of a transaction log flush in the end transaction

procedure if the transaction log has been flushed (Tada, Fig. 5, col. 10, lines 29-47).

As per claim 7, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 1, except for explicitly disclosing identifying the transaction as an implicit transaction.

Implicit transaction is a type of SQL transaction which is used to access databases. The database

management system of Tada performs transactions on a database (Tada, col. 1, lines 23-27). The

database management system can use any available access method to access the database, which

include implicit transaction.

As per claim 8, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 1, and further teach performing the end transaction procedure, which follows execution of

the transaction (Tada, Fig. 5, S14, Initialize transaction end indication).

As per claim 9, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 8, and further teach skipping broadcast of a directive indicating commencement of the end

transaction procedure to the plurality of access modules (Tada, Fig. 5, col. 10, line 10 - col. 11,

line 64).

As per claim 17, Tada teaches a database system comprising:

a plurality of storage media, the storage media comprising persistent storage (Tada, Fig.

1,);

volatile storage (Tada, Fig. 1); and

the access module being adapted to flush a transaction log before performing an end

transaction procedure (The applicants disclose "flush" as transferring the transaction log from the

volatile storage to stable storage, specification, page 2, lines 13-20. Tada discloses "The log data

is then transferred to the log data buffer (132) on the main storage unit (101)", Tada, Fig. 5, col.

10, lines 33-34).

Tada does not explicitly disclose the log is flushed to a non-volatile storage. However,

data stored in the volatile storage will be lost when the system goes down, while the data in non-

volatile storage will not be lost. Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to flush the log to non-volatile storage so that the data

will not be lost when the system goes down. Then the user can use the log data in the non-

volatile storage to recover the system.

Tada does not explicitly disclose the transaction is processed by a plurality of access

modules. Bohannon discloses the transaction is processed by a plurality of access modules

(Bohannon, col. 7, lines 37-40). Therefore, it would have been obvious to one of ordinary skill

in the art at the time the invention was made to use the multi, parallel and distributed processing

environments disclosed by Bohannon in the system of Tada to divide a large processing task into

smaller work and process concurrently. Because the smaller work can be distributed to

processes running on one or more processing nodes, the processing required by the process can

be completed much faster than if the processing was performed on a single node by a single

process.

As per claim 18, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 17, and further teach determining if each access module has flushed the transaction log

maintained by the access module (Tada, col. 10, lines 35-37).

As per claim 19, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 18, and further teach skipping sending a directive to perform a transaction log flush if the

controller determines that each access module has flushed the transaction log before the end

transaction procedure (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 20, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 17, and further teach providing a flush directive with a message to each of the access

modules to perform a last step of the transaction (Tada, Fig. 5, S12, Set transaction end

indication).

As per claim 21, Tada teaches an article comprising a medium storing instructions for

enabling a processor-based system to:

receive a transaction to be performed (Tada, col. 1, lines 23-27); and

determine that a last step of the transaction, wherein the last step is performed before an

end transaction procedure (Tada, Fig. 5, col. 10, lines 35-37); and

flush a transaction log to a storage while the last step is performed by the plurality of

access modules (The applicants disclose "flush" as transferring the transaction log from the

volatile storage to stable storage, specification, page 2, lines 13-20. Tada discloses "The log data

is then transferred to the log data buffer (132) on the main storage unit (101)", Tada, Fig. 5, col.

10, lines 33-34).

Tada does not explicitly disclose the log is flushed to a non-volatile storage. However,

data stored in the volatile storage will be lost when the system goes down, while the data in non-

volatile storage will not be lost. Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to flush the log to non-volatile storage so that the data

will not be lost when the system goes down. Then the user can use the log data in the non-

volatile storage to recover the system.

Tada does not explicitly disclose the transaction is processed by a plurality of access

modules. Bohannon discloses the transaction is processed by a plurality of access modules

(Bohannon, col. 7, lines 37-40). Therefore, it would have been obvious to one of ordinary skill

in the art at the time the invention was made to use the multi, parallel and distributed processing

environments disclosed by Bohannon in the system of Tada to divide a large processing task into smaller work and process concurrently. Because the smaller work can be distributed to processes running on one or more processing nodes, the processing required by the process can be completed much faster than if the processing was performed on a single node by a single process.

As per claim 22, Tada and Bohannon teach all the claimed subject matters as discussed in claim 21, and further teach performing an end transaction, wherein the end transaction follows execution of the transaction (Tada, Fig. 5, S14, Initialize transaction end indication).

As per claim 23, Tada and Bohannon teach all the claimed subject matters as discussed in claim 22, and further teach avoiding broadcast of a directive indicating commencement of the end transaction to the plurality of access modules (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 24, Tada teaches a method of performing a transaction in a database system, comprising:

maintaining a log in volatile storage to track operations performed in the transaction (Tada, col. 1, lines 23-27);

writing the log to persistent storage before start of an end transaction procedure (Tada, Fig. 5, col. 10, lines 33-34).

Tada does not explicitly disclose the transaction is processed by a plurality of access modules. Bohannon discloses the transaction is processed by a plurality of access modules (Bohannon, col. 7, lines 37-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multi, parallel and distributed processing

environments disclosed by Bohannon in the system of Tada to divide a large processing task into

smaller work and process concurrently. Because the smaller work can be distributed to

processes running on one or more processing nodes, the processing required by the process can

be completed much faster than if the processing was performed on a single node by a single

process.

As per claim 25, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 24, and further teach writing the log to persistent storage comprises flushing the log (Tada,

Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 26, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 24, and further teach maintaining a transaction log (Tada, Fig. 1, element 311).

As per claim 27, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 24, and further teach performing the end transaction procedure, the end transaction

procedure comprising writing an end transaction indication into the log (Tada, Fig. 5, S06, issue

trn-end macro).

As per claim 28, Tada teaches a database system comprising:

storage media comprising persistent storage (Tada, Fig. 1);

volatile storage (Tada, Fig. 1);

access modules coupled to the storage media (Tada, Fig. 3, element 106); and

providing a directive with a message to perform a last step of a transaction and

communicating the directive to the access modules, each access module responsive to the

directive to perform a transaction log flush before performance of an end transaction procedure

(Tada, Fig. 5, col. 10, line 10 - col. 11, line 64); and

determining if each of the access modules has performed a transaction log flush before

start of the end transaction procedure (Tada, Fig. 5, col. 10, lines 35-37);

avoiding sending a broadcast directive to the access modules to cause performance of a

transaction log flush during the end transaction procedure (Tada, Fig. 5, col. 10, line 10 - col. 11,

line 64).

Tada does not explicitly disclose the log is flushed to a non-volatile storage. However,

data stored in the volatile storage will be lost when the system goes down, while the data in non-

volatile storage will not be lost. Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to flush the log to non-volatile storage so that the data

will not be lost when the system goes down. Then the user can use the log data in the non-

volatile storage to recover the system.

Tada does not explicitly disclose the transaction is processed by a plurality of access

modules. Bohannon discloses the transaction is processed by a plurality of access modules

(Bohannon, col. 7, lines 37-40). Therefore, it would have been obvious to one of ordinary skill

in the art at the time the invention was made to use the multi, parallel and distributed processing

environments disclosed by Bohannon in the system of Tada to divide a large processing task into

smaller work and process concurrently. Because the smaller work can be distributed to

processes running on one or more processing nodes, the processing required by the process can

be completed much faster than if the processing was performed on a single node by a single

process.

As per claim 29, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 1, and further teach performing the plural steps prior to performing the end transaction

procedure (Tada, Fig. 5), and wherein performing the flush of the transaction log comprises performing the flush of the transaction log in one of the plural steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 30, Tada and Bohannon teach all the claimed subject matters as discussed in claim 29, and further teach performing the flush of the transaction log in a last one of the plural steps (Tada, Fig. 5, S13, Write DB).

As per claim 31, Tada and Bohannon teach all the claimed subject matters as discussed in claim 30, and further teach performing the flush of the transaction log in a last one of the plural steps (Tada, Fig. 5, S13, Write DB).

As per claim 32, Tada and Bohannon teach all the claimed subject matters as discussed in claim 31, and further teach adding a first entry to the transaction log to redo the transaction by the access module in case of system failure (Tada, col. 3, lines 30-35).

As per claim 33, Tada and Bohannon teach all the claimed subject matters as discussed in claim 4, and further teach performing the flush of the transaction log in the end transaction procedure if the last step is not performed by all of the plurality of access modules (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 34, Tada and Bohannon teach all the claimed subject matters as discussed in claim 17, and further teach the access modules to perform a transaction comprising plural steps, one or more of the access modules adapted to perform the plural steps prior to the end transaction procedure, and the access modules adapted to perform the flush of the transaction log in one of the plural steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 35, Tada and Bohannon teach all the claimed subject matters as discussed in claim 34, and further teach the one of the plural steps comprises a last one of the steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 36, Tada and Bohannon teach all the claimed subject matters as discussed in claim 35, and further teach a first entry associated with each access module to enable a redo of the transaction in case of system failure (Tada, Fig. 1, col. 3, lines 30-35).

As per claim 37, Tada and Bohannon teach all the claimed subject matters as discussed in claim 36, and further teach a second entry associated with each access module to enable an undo of the transaction (Tada, Fig. 1 & 5, col. 10, line 10 - col. 11, line 64).

As per claim 38, Tada and Bohannon teach all the claimed subject matters as discussed in claim 34, and further teach determine whether a last one of the steps involves all the access modules, and in response to determining that the last one of the steps involves all the access modules, the controller to send a directive to all the access modules to perform the flush of the transaction log in the last one of the steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 39, Tada and Bohannon teach all the claimed subject matters as discussed in claim 38, and further teach sending a directive to perform the flush of the transaction log in the end transaction procedure (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 40, Tada and Bohannon teach all the claimed subject matters as discussed in claim 21, and further teach perform the plural steps prior to performing the end transaction procedure (Tada, Fig. 5), and wherein performing the flush of the transaction log comprises performing the flush of the transaction log in one of the plural steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 41, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 40, and further teach wherein performing the plural steps comprises performing, in each of

the plural steps, access of relational table data stored in the database system (Tada, col. 1, lines

23-27).

As per claim 42, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 41, and further teach performing the flush of the transaction log in a last one of the plural

steps (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 43, Tada and Bohannon teach all the claimed subject matters as discussed in

claim 42, and further teach enabling a processor-based system to cause each access module to

add a first entry to the transaction log to redo the transaction by the access module in case of

system failure (Tada, col. 3, lines 30-35).

7.   Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al.

("Tada", 5,544,359).

As per claim 10, Tada teaches a method of performing an end transaction procedure in a

database system, comprising:

a first access module in the database system writing an end transaction indication to a

first transaction log portion, the first access module being part of a cluster of access modules

(Tada, Fig. 5, S12, Set Transaction End Indication); and

the first access module sending an end transaction directive to a module associated with

the first access module (Tada, Fig. 5, S12, Set Transaction End Indication).

Tada does not explicitly disclose the module is a fallback module. Fallback is a

redundancy operation in which a copy of a database portion is stored on a different access

module than where the original of the data portion is stored. Tada teaches transferring data to

buffer which is a different storage location than where the original of the data portion is stored

(Tada, col. 10, lines 29-67). Therefore, it is obvious the system of Tada includes a fallback

feature.

As per claim 11, Tada teaches all the claimed subject matters as discussed in claim 10,

and further teaches the first access module sends the end transaction directive to the fallback

module but not to other access modules in the cluster (Tada, Fig. 5, col. 10, line 10 - col. 11, line

64).

As per claim 12, Tada teaches all the claimed subject matters as discussed in claim 10,

and further teaches sending the end transaction directive comprises sending an end transaction-

part one directive (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 13, Tada teaches all the claimed subject matters as discussed in claim 12,

and further teaches the first access module broadcasting an end transaction-part two directive to

all access modules in the cluster (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 14, Tada teaches all the claimed subject matters as discussed in claim 10,

and further teaches the fallback module writing an end transaction indication to a second

transaction log portion (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

As per claim 15, Tada teaches all the claimed subject matters as discussed in claim 10,

and further teaches the first access module flushing the first transaction log portion (Tada, Fig. 5,

col. 10, line 10 - col. 11, line 64).

As per claim 16, Tada teaches all the claimed subject matters as discussed in claim 10,

and further teaches the first access module flushing the first transaction log portions but the other

access modules in the cluster not flushing their respective transaction log portions (Tada, Fig. 5, col. 10, line 10 - col. 11, line 64).

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sherman et al. (5,832,508) disclose a method for deallocating a log in database systems.

Litaize et al. (6,112,287) disclose a shared memory multiprocessor system using a set of serial links as processssors-memory switch.

Feeney et al. (6,408,341) disclose Multi-tasking adapter for parallel network applications.

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is 703-305-8319. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703)305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 30, 2004
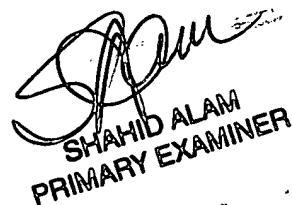
SHAHID ALAM
PRIMARY EXAMINER